

REMARKS

In the Office action, claims 10, 11, 13, 14, 30, 31 and 34 were rejected as anticipated by Kowal; claims 1-8, 12, 32 and 35 were rejected as being unpatentable over Kowal in view of two Kreidel references; claim 33 was rejected as being unpatentable over Kowal in view of Trickle; claims 15 was rejected as being unpatentable over Kowal in view of Schwarz; and claim 9 was rejected as being unpatentable over Kowal in view of Kreidel and Schwarz.

The independent claims that remain after this amendment, notably claims 1, 10, 30 and 35 have been amended to recite that the ferrule has a collet portion of the cylindrical interior wall that is convex upon pull-up to swage the ferrule near the forward or front edge onto the tube end. The claims further recite that the collet portion of the cylindrical interior wall of the ferrule is deformed radially inwardly by a hinging action, and wherein the collet portion is axially adjacent the forward or front edge.

The claims thus recite two distinct actions, the first being a radial compression to cause the front edge to indent or penetrate the tube wall, and a hinging action that acts on an axially adjacent collet portion and produces a swaged region near the front or forward edge that is convex.

The art of record, and to the Applicants' knowledge no one prior, has produced a ferrule that deforms during pull-up so as to both bite the tube and also produce the hinging action to grip the tube end with a convex portion near the bite. Kowal and the other references of record merely show the old concept of bending or bowing concavely the front edge inward to bite or penetrate the tube wall. There is no additional deformation as recited in the presently amended claims, such as the hinging to produce a convex portion near the bite to grip the tube end. This is particularly so for the present independent and dependent claims that further recite a ferrule that is case hardened about its entire surface.

In the Office action it is suggested that either portion 24 or 30 of Kowal is the 'collet portion' axially behind the forward edge and that this collet portion is convex upon pull-up. Applicants acknowledge that the portion 30 grips the tube end and appears to be illustrated with

a convex appearance, however it seems clear that the portion 30 is not a collet portion that is axially adjacent the forward edge and also does not produce a swaged region near the front edge after pull-up. To the contrary the portion 30 is nowhere near the forward edge but rather is at the back end of the sleeve 25. Moreover, the Office action states that the portion pointed at with the numeral 24 of Kowal is a convex portion. Applicants must respectfully disagree. First, the portion 24 is not apparently illustrated as being convex as best as can be discerned from the drawings. Moreover, with the forward edge 29 being radially compressed inward and the back end 30 being radially compressed inward it is not apparent how the region 24 could be convex after pull-up. Still further, there is no suggestion that there is any further deformation action in the Kowal design other than forward edge bite and the action near the region marked 30.

If Kowal indeed taught a convex swaged region near the forward edge as suggested in the Office Action then there would be no need for the portion 30. The Kowal reference clearly describes that the portion 30 is to provide vibration isolation for the forward bite (col. 5, lines 11-19) and that it is located axially outwardly of the constricted nose portion biting edge. Still further, Kowal shows no structure or geometry to the sleeve 25 that would produce the hinging action and result as set forth in the pending claims.

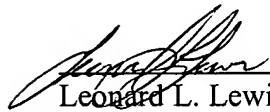
Applicants traverse the rejections of the dependent claims including as to the combination of references, and also traverse that the Trickle reference is prior art, however, further comment will be deferred pending further examination of the amended independent claims. Applicants also strongly traverse the suggestion that it would be obvious to case harden the Kowal ferrule. Case hardening substantially changes the ability of a ferrule to deform and there is no basis on which to conclude that the Kowal design would perform as intended if the ferrule were case hardened.

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The present application is deemed to be in proper condition for allowance and favorable action is requested.

Respectfully submitted,

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